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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,774	01/22/2002	Eickhart Goebel	P/4074-5	4262

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OSTROLENK FABER GERB & SOFFEN
1180 AVENUE OF THE AMERICAS
NEW YORK, NY 100368403

EXAMINER

GARBER, CHARLES D

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 04/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/053,774

Applicant(s)

GOEBEL, EICKHART

Examiner

Charles Garber

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10, 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Parker et al. (US Patent 5,396,436).

Regarding claim 1, Parker discloses an apparatus and method of calibrating a wheel balancing apparatus (title) including causing imbalances mounted to a spindle (equivalent to a given calibration masses of the instant invention) to rotate about a measuring axis in given axial and radial positions in calibration runs (see positions P1, P2 and P3 shown in figure 5 and column 9 lines 9-23), measuring the forces which result from unbalances caused by the imbalances (equivalent to calibration masses of the instant invention), and evaluating the measured forces for calibration of the unbalance measuring apparatus (column 2 lines 15-22, see also figure 5 and column 7 lines 27-39).

While Parker presents a preferred procedure involving three spins involving advantageously only one mass (column 9 line 9 to column 11 line 16) in order to derive static and couple calibration signals, Parker explains the couple calibration signal components L_{cx} , L_{cy} , R_{cx} and R_{cy} may be obtained directly in one spin with two masses mounted at points P1 and P3 located in axial planes, Calibration Reference

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Plane 1 and Calibration Reference Plane 2. (figure 5 and column 11 line 41 to column 12 line 16 especially column 12 lines 12-16)

As for claims 2 and 3, Parker discloses the calibration masses may be the same size or different sizes but that signals must be scaled in magnitude if different (column 10 lines 39-45).

As for claim 4, the positions P1 and P3 are located at 0 and π in the plane.

As for claim 5, Parker further discloses positioning a mass at position P2 which is at an angular position as the mass located at position P3. Location of the mass at P2 is done to derive the static calibration signal components Lsx, Lsy, Rsx and Rsy.

As for claims 6 and 7, Parker discloses the calibration masses may be at the same locations or different locations but that signals must be scaled in magnitude if different (column 10 lines 39-45).

As for claim 8, the calibration run using position P2 is performed with only one weight and derives the static calibration signal described above with respect to claims 1 and 5.

As for claim 9, the masses at points P1, P2 and P3 are fixed to a wheel balancer spindle 13 and hub 13a which are shown to be uniform and symmetric and are therefore considered inherently substantially balanced about the axis of rotation. Though an alternative embodiment of the Parker invention conducts a first run with not unbalancing mass to measure the effect of any minor residual imbalance, the first embodiment does not carry out this step and therefore assumes the spindle must be substantially balanced.

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As for claim 10, Parker discloses an alternative procedure including a first spin with no weight attached and subsequent runs with weights attached. (column 10 lines 46-58). The "alternative procedure provides residual spindle imbalance data directly". "This residual spindle imbalance affects all the measurements of the sensors and is compensated for in the present invention". (column 3 lines 43-47)

As for claim 12, Parker discloses an apparatus for calibrating a wheel balance apparatus including a spindle 13 (equivalent to a measuring shaft); a balancer base 12 which is means supporting the spindle rotatably about a measuring axis (see figures 1 and 2); a hub 13A is joined to the spindle 13 as shown in figures 1 and 2. The joint while not referenced is means for mounting the hub (or balanced test rotary member) on the spindle. The holes in the hub shown in figure 5 adjacent the Points P1, P2, and P3 are fixing means for fixing calibration weights to the hub at fixing locations. As discussed above with respect to claim 1 the weights are fixed in different axial calibration planes when running calibration tests deriving static and couple calibration signals. A "pair of piezoelectric transducers 19 and 21 (or other suitable sensors such as strain gauges) coupled to spindle 13 and mounted on the balancer base 12" are measuring sensors adapted to measure forces operative at the spindle when the test hub rotates as in the instant invention. The electrical circuitry shown in figure 3 is an evaluation means connected to the transducers and adapted to evaluate the measured forces for calibration of the balancing apparatus.

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As for claim 13, as discussed above with respect to claim 4 weights located at positions P1 and P3 for determining the couple calibrations signal are arranged displaced relative to each other through an angle of 180° about the measuring axis.

Claim 14 is substantively equivalent to claim 12 except for means for driving the measuring shaft in rotation. However, Parker further discloses motor M shown in figure 3 which is means driving the spindle as in the instant invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parker et al. (US Patent 5,396,436).

Parker lacks the residual unbalance of the test rotary member is measured and compensated in calibration of the measuring apparatus after at least one calibration run.

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It would have been an obvious matter of design choice to measure and compensate for residual unbalance after at least one calibration run, since applicant has not disclosed that running the residual test after (as opposed to before as in Parker) the calibration run solves any stated problem or is for any particular purpose and by admission (see the specification page 4 lines 11-15) the invention would perform equally well by running the residual test before the calibration run as in Parker.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The additional references cited on the accompanying form PTO-892 though not cited above are provided to indicate other prior art wheel balancing apparatus calibration methods and devices which include one or more features or limitations in common with the instant invention.

.Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Garber whose telephone number is (703) 308-6062. The examiner can normally be reached on 6:30 a.m. to 3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7725 for regular communications and (703) 308-7725 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.

cdg
April 2, 2003

A handwritten signature in black ink, appearing to be "CDAL" with a stylized flourish at the end.